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(71)Applicant : MITSUBISHI CHEM IND LTD

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(72)Inventor : WADA HIROSUKE

BABA AKIO

WADA NOBORU

(54) PREPARATION OF GLYCOLIC ETHER AND ESTER

(57)Abstract:

PURPOSE: To obtain the titled compound useful as an industrial intermediate, e.g. ethylene glycol or cellosolve, at a high reaction rate, by reacting formaldehyde with a formic ester and CO in the presence of a strong acidic catalyst.

CONSTITUTION: Formaldehyde, e.g. gaseous formaldehyde, trioxane or paraformaldehyde and a formic ester of a 1W10C alkanol are injected into an acidic catalyst, e.g. a strong acid such as phosphomolybdic acid, concentrated sulfuric acid or p- toluenesulfonic acid, having an acid strength $pK_a \leq 2$ and if necessary water or a solvent at a CO partial pressure of 20W150kg/cm² and reacted at 50W250°C to give a glycolic ester and a glycolic acid ether. The amount of the formic ester is 0.1W5mol based on one mol formaldehyde, and if desired the ester is usable in excess as a solvent. The amount of the strong acid is 0.1W1,000meq based on one mol formaldehyde.

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